operating the robotic arm **30** to cause the robotic arm **30** to place each of the beakers **54** into the oven **80** to evaporate the water W from each beaker **54**; the computer **20** operating the oven **80** to increase the oven **80** internal temperature to a second temperature for a second length of time, thereby heating the beakers **54** and residue R within the beakers **54** to the second temperature and permitting the beakers **54** to remain heated at the second temperature until all water is evaporated from the beakers **54**; the computer operating the robotic arm **30** to remove the beakers **54** from the oven **80** and place the beakers **54** into the desiccator enclosure **90** to cool to the balance temperature; the computer operating the robotic arm **30** to place the beakers **54** one at a time onto the top loader balance scale **70**; the computer **20** receiving weight transmitted by the top loader balance **70** of each successive beaker **54** and its corresponding contained residue R to the database D; the computer **20** subtracting the tare weight of each beaker **54** to calculate the net weight of the residue R in each beaker **54**; the computer **20** calculating the total dissolved solids (TDS) from the net weight and volume for each beaker **54**; the computer **20** repeating the weighings of each beaker **54** to obtain constant weights for each beaker **54** according to criteria stored in the database D; once the constant weight criteria is met for each beaker **54**, the computer **20** using the most recent weight to calculate the final TDS, and storing and recording the final TDS for each beaker **54** in the database D.

The volume needed for the test (in milliliters) is 25000/conductivity in micromhos. The first temperature preferably is substantially 105 degrees Celsius. The first length of time preferably is substantially two hours. The second temperature preferably is 98 degrees Celsius for a second length of time, which is however long is needed for the beakers to become completely dry, which normally is several hours. Then the temperature is raised to 180 degrees Celsius for a third length of time of one hour to drive off any occluded moisture. The calculation of total dissolved solids (TDS) from the net weight and volume taken preferably is made according to the formula: TDS ((mg/1=(A−B)×1000/sample volume (in grams)).

While the invention has been described, disclosed, illustrated and shown in various terms or certain embodiments or modifications which it has assumed in practice, the scope of the invention is not intended to be, nor should it be deemed to be, limited thereby and such other modifications or embodiments as may be suggested by the teachings herein are particularly reserved especially as they fall within the breadth and scope of the claims here appended.

I claim as my invention:

1. A method of testing water to determine concentrations of dissolved solids, comprising the steps of:

providing a testing apparatus comprising a sample bottle fitted with a removable cap and having a filter comprising a filter mesh, a plurality of testing vessels, a desiccator enclosure, a computer containing a database and a water testing computer program in operational communication the database, a computer operated robotic arm having a gripper in communication with the computer, a computer operated conductivity meter having a meter electrode and in communication with the computer, a computer operated scale for recording and storing weights in the computer database, and a computer operated oven in communication with the computer;

one of a person or the computer operated robotic arm delivering a first water sample into the sample bottle and securing the removable cap onto the sample bottle;

the robotic arm grasping the meter electrode and inserting the electrode into the water sample;

the conductivity meter relaying sample water conductivity data to the database;

the robotic arm sequentially placing the at least one of the testing vessels into the oven;

the computer signaling the oven to heat to a first temperature for a first length of time to thereby evaporate any moisture on or within the testing vessels;

the robotic arm removing the testing vessels from the oven;

the robotic arm placing the testing vessels sequentially into the desiccator enclosure;

the robotic arm placing the testing vessels one at a time onto the analytical scale to transmit to the database and record the tare weight;

the robotic arm placing each tared testing vessel on the scale one at a time;

the robotic arm lifting the sample bottle and moving the sample bottle toward a first one of the testing vessels on the scale;

the robotic arm moving the sample bottle to mix the water sample;

inverting the sample bottle over the first one of the testing vessels;

the robotic arm gripper then proportionately squeezing the sample bottle while the computer monitors the weight of the testing vessel and sample water as the sample water enters the first testing vessel;

the gripper discontinuing the sample bottle squeezing once a desired volume of sample water is reached in the first testing vessel;

the computer operating the robotic arm to sequentially repeat these testing vessel filling steps to fill a plurality of additional testing vessels;

the computer operating the robotic arm to grip, lift and place the testing vessels into the oven;

the computer operating the oven to increase its internal temperature to a second temperature to evaporate the water from the testing vessels, leaving residue in the testing vessels;

heating the testing vessels and the residue within the testing vessels to the second temperature and permitting the testing vessels to remain heated at the second temperature until all of the water in the testing vessel is evaporated;

the robotic arm removing the testing vessels from the oven;

and placing the testing vessels into the desiccator enclosure to cool to a temperature of the balance;

the robotic arm placing the testing vessels one at a time onto the scale;

the scale transmitting the weights of each successive testing vessel and its corresponding contained residue to the database;

the computer calculating the net weight of the residue in each testing vessel by subtracting the tare weight of the corresponding testing vessel;

the computer calculating the quantity of total dissolved solids from the net weight and volume for each testing vessel;

the computer repeating the weighings of each testing vessel to obtain constant weights according to stored criteria for each testing vessel;

and, once the constant weight criteria is met for each testing vessel, the computer using the most recent weight to calculate the final total dissolved solids and